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What is claimed is:

1. A production process for a water-absorbent resin, comprising the steps of: blending a liquid material and a water-absorbent resin; and heating the resultant mixture in order to produce a modified water-absorbent resin,

with the production process being characterized by further comprising the step of spray-blending a water-absorbent resin (A) and a liquid material (B) with a blending apparatus equipped with a spray nozzle (C), and being characterized in that the liquid material (B) is sprayed from the spray nozzle (C) and its spray pattern is a circular and hollow cone shape.

2. A production process for a water-absorbent resin, comprising the steps of: blending a liquid material and a water-absorbent resin; and heating the resultant mixture in order to produce a modified water-absorbent resin,

with the production process being characterized by further comprising the step of spray-blending a water-absorbent resin (A) and a liquid material (B) with a blending apparatus equipped with a spray nozzle (C), and being characterized in that the liquid material (B) is sprayed from the spray nozzle (C) and its spray pattern is a double-convex-lens and elliptic cone shape.

3. A production process for a water-absorbent resin, comprising the steps of: blending a liquid material (B) and a water-absorbent resin (A); and heating the resultant mixture in order to produce a modified water-absorbent resin,

with the production process being characterized by further comprising the
5 step of heat-treating a water-absorbent resin under an atmosphere having a dew point of not higher than 60 °C and a temperature of not lower than 90 °C, wherein the water-absorbent resin is obtained after a drying step following a pulverization step.

10 4. A production process for a water-absorbent resin, comprising the steps of: blending a liquid material and a water-absorbent resin; and heating the resultant mixture in order to produce a modified water-absorbent resin,

with the production process further comprising the steps of:
spray-blending a water-absorbent resin (A) and a liquid material (B) with a blending
15 apparatus equipped with a spray nozzle (C); and heat-treating,

with the production process being characterized in that the liquid material (B) is sprayed from the spray nozzle (C) and its spray pattern is a circular and hollow cone shape in the spray-blending step, and in that the heat-treating step is carried out under an atmosphere having a dew point of not higher than 60 °C and a
20 temperature of not lower than 90 °C.

5. A production process for a water-absorbent resin, comprising the steps of: blending a liquid material and a water-absorbent resin; and heating the resultant mixture in order to produce a modified water-absorbent resin,

5 with the production process further comprising the steps of: spray-blending a water-absorbent resin (A) and a liquid material (B) with a blending apparatus equipped with a spray nozzle (C); and heat-treating,

with the production process being characterized in that the liquid material (B) is sprayed from the spray nozzle (C) and its spray pattern is a
10 double-convex-lens and elliptic cone shape in the spray-blending step, and in that the heat-treating step is carried out under an atmosphere having a dew point of not higher than 60 °C and a temperature of not lower than 90 °C.

6. A production process for a water-absorbent resin according to
15 claim 1, wherein the maximum spray angle of the liquid material (B) from the spray nozzle (C) is not less than 50 °.

7. A production process for a water-absorbent resin according to claim 1, wherein the blending apparatus equipped with the spray nozzle (C) is a
20 continuous blending apparatus comprising an agitation shaft having a plurality of

paddles.

8. A production process for a water-absorbent resin according to claim 7, wherein the area of a spray-dispersing state of the liquid material (B) projected onto a sectional area which is perpendicular to the axis direction of the blending apparatus and includes a spraying point of the spray nozzle (C) accounts for not less than 70 % of the sectional area perpendicular to the axis direction of the blending apparatus.

9. A production process for a water-absorbent resin according to claim 1, wherein the blending apparatus is equipped with the plurality of spray nozzles (C).

10. A production process for a water-absorbent resin according to claim 1, wherein the liquid material (B) is an aqueous solution of a surface-crosslinking agent which forms a covalent bond by reacting with a functional group of the water-absorbent resin (A), and

which further comprises the step of heat-treating the mixture resultant from the blending step at a water-absorbent resin temperature of 80 to 250 °C.

11. A production process for a water-absorbent resin according to claim 10, wherein the liquid material (B) is an aqueous solution including at least one selected from the group consisting of polyhydric alcohols, polyglycidyl compounds, 1,3-dioxolan-2-on, poly(2-oxazolidinone), bis(2-oxazolidinone), and
5 mono(2-oxazolidinone).

12. A production process for a water-absorbent resin according to claim 11, wherein the liquid material (B) is an aqueous surface-crosslinking agent solution including a polyhydric alcohol.

10

13. A production process for a water-absorbent resin according to claim 2, wherein the maximum spray angle of the liquid material (B) from the spray nozzle (C) is not less than 50 °.

15 14. A production process for a water-absorbent resin according to claim 2, wherein the blending apparatus equipped with the spray nozzle (C) is a continuous blending apparatus comprising an agitation shaft having a plurality of paddles.

20 15. A production process for a water-absorbent resin according to

claim 14, wherein the area of a spray-dispersing state of the liquid material (B) projected onto a sectional area which is perpendicular to the axis direction of the blending apparatus and includes a spraying point of the spray nozzle (C) accounts for not less than 70 % of the sectional area perpendicular to the axis direction of the
5 blending apparatus.

16. A production process for a water-absorbent resin according to claim 2, wherein the blending apparatus is equipped with the plurality of spray nozzles (C).

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17. A production process for a water-absorbent resin according to claim 2, wherein the liquid material (B) is an aqueous solution of a surface-crosslinking agent which forms a covalent bond by reacting with a functional group of the water-absorbent resin (A), and

15 which further comprises the step of heat-treating the mixture resultant from the blending step at a water-absorbent resin temperature of 80 to 250 °C.

18. A production process for a water-absorbent resin according to claim 17, wherein the liquid material (B) is an aqueous solution including at least
20 one selected from the group consisting of polyhydric alcohols, polyglycidyl

compounds, 1,3-dioxolan-2-on, poly(2-oxazolidinone), bis(2-oxazolidinone), and mono(2-oxazolidinone).

19. A production process for a water-absorbent resin according to
5 claim 18, wherein the liquid material (B) is an aqueous surface-crosslinking agent solution including a polyhydric alcohol.

20. A production process for a water-absorbent resin according to
claim 3, wherein the liquid material (B) is spray-blended with a blending apparatus
10 equipped with a spray nozzle (C).

21. A production process for a water-absorbent resin according to
claim 20, wherein the maximum spray angle of the liquid material (B) from the
spray nozzle (C) is not less than 50 °.

15

22. A production process for a water-absorbent resin according to
claim 20, wherein the blending apparatus equipped with the spray nozzle (C) is a
continuous blending apparatus comprising an agitation shaft having a plurality of
paddles.

20

23. A production process for a water-absorbent resin according to claim 22, wherein the area of a spray-dispersing state of the liquid material (B) projected onto a sectional area which is perpendicular to the axis direction of the blending apparatus and includes a spraying point of the spray nozzle (C) accounts
5 for not less than 70 % of the sectional area perpendicular to the axis direction of the blending apparatus.

24. A production process for a water-absorbent resin according to claim 20, wherein the blending apparatus is equipped with the plurality of spray
10 nozzles (C).

25. A production process for a water-absorbent resin according to claim 3, wherein the liquid material (B) is an aqueous solution of a surface-crosslinking agent which forms a covalent bond by reacting with a
15 functional group of the water-absorbent resin (A), and

which further comprises the step of heat-treating the mixture resultant from the blending step at a water-absorbent resin temperature of 80 to 250 °C.

26. A production process for a water-absorbent resin according to
20 claim 25, wherein the liquid material (B) is an aqueous solution including at least

one selected from the group consisting of polyhydric alcohols, polyglycidyl compounds, 1,3-dioxolan-2-on, poly(2-oxazolidinone), bis(2-oxazolidinone), and mono(2-oxazolidinone).

5 27. A production process for a water-absorbent resin according to claim 26, wherein the liquid material (B) is an aqueous surface-crosslinking agent solution including a polyhydric alcohol.

 28. A production process for a water-absorbent resin according to
10 claim 4, wherein the maximum spray angle of the liquid material (B) from the spray nozzle (C) is not less than 50 °.

 29. A production process for a water-absorbent resin according to claim 4, wherein the blending apparatus equipped with the spray nozzle (C) is a
15 continuous blending apparatus comprising an agitation shaft having a plurality of paddles.

 30. A production process for a water-absorbent resin according to claim 29, wherein the area of a spray-dispersing state of the liquid material (B)
20 projected onto a sectional area which is perpendicular to the axis direction of the

blending apparatus and includes a spraying point of the spray nozzle (C) accounts for not less than 70 % of the sectional area perpendicular to the axis direction of the blending apparatus.

5 31. A production process for a water-absorbent resin according to claim 4, wherein the blending apparatus is equipped with the plurality of spray nozzles (C).

 32. A production process for a water-absorbent resin according to
10 claim 4, wherein the liquid material (B) is an aqueous solution of a surface-crosslinking agent which forms a covalent bond by reacting with a functional group of the water-absorbent resin (A), and

 which further comprises the step of heat-treating the mixture resultant from the blending step at a water-absorbent resin temperature of 80 to 250 °C.

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 33. A production process for a water-absorbent resin according to claim 32, wherein the liquid material (B) is an aqueous solution including at least one selected from the group consisting of polyhydric alcohols, polyglycidyl compounds, 1,3-dioxolan-2-on, poly(2-oxazolidinone), bis(2-oxazolidinone), and
20 mono(2-oxazolidinone).

34. A production process for a water-absorbent resin according to claim 33, wherein the liquid material (B) is an aqueous surface-crosslinking agent solution including a polyhydric alcohol.

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35. A production process for a water-absorbent resin according to claim 5, wherein the maximum spray angle of the liquid material (B) from the spray nozzle (C) is not less than 50 °.

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36. A production process for a water-absorbent resin according to claim 5, wherein the blending apparatus equipped with the spray nozzle (C) is a continuous blending apparatus comprising an agitation shaft having a plurality of paddles.

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37. A production process for a water-absorbent resin according to claim 36, wherein the area of a spray-dispersing state of the liquid material (B) projected onto a sectional area which is perpendicular to the axis direction of the blending apparatus and includes a spraying point of the spray nozzle (C) accounts for not less than 70 % of the sectional area perpendicular to the axis direction of the
20 blending apparatus.

38. A production process for a water-absorbent resin according to claim 5, wherein the blending apparatus is equipped with the plurality of spray nozzles (C).

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39. A production process for a water-absorbent resin according to claim 5, wherein the liquid material (B) is an aqueous solution of a surface-crosslinking agent which forms a covalent bond by reacting with a functional group of the water-absorbent resin (A), and

10 which further comprises the step of heat-treating the mixture resultant from the blending step at a water-absorbent resin temperature of 80 to 250 °C.

40. A production process for a water-absorbent resin according to claim 39, wherein the liquid material (B) is an aqueous solution including at least
15 one selected from the group consisting of polyhydric alcohols, polyglycidyl compounds, 1,3-dioxolan-2-on, poly(2-oxazolidinone), bis(2-oxazolidinone), and mono(2-oxazolidinone).

41. A production process for a water-absorbent resin according to
20 claim 40, wherein the liquid material (B) is an aqueous surface-crosslinking agent

solution including a polyhydric alcohol.

42. A water-absorbent resin, which is surface-crosslinked with a surface-crosslinking agent including at least a polyhydric alcohol, has a particle size distribution such that the ratio of particles having particle diameters of smaller than 5 150 μm is not more than 5 weight %, and exhibits an absorption capacity without a load of not less than 30 g/g,

with the water-absorbent resin being characterized in that: the single-layer absorption capacity (10 min.) of particles having particle diameters of 600 to 300 10 μm is not less than 30 g/g under a load; the single-layer absorption capacity (60 min.) of particles having particle diameters of 600 to 300 μm is not less than 30 g/g under a load; the single-layer absorption capacity (10 min.) of particles having particle diameters of 300 to 150 μm is not less than 30 g/g under a load; and the single-layer absorption capacity (60 min.) of particles having particle diameters of 15 300 to 150 μm is not less than 30 g/g under a load.

43. A water-absorbent resin, which is surface-crosslinked with a surface-crosslinking agent including at least a polyhydric alcohol, has a particle size distribution such that the ratio of particles having particle diameters of smaller than 20 150 μm is not more than 5 weight %, and exhibits an absorption capacity without a

load of not less than 30 g/g,

with the water-absorbent resin being characterized in that the index of uniform surface-treatment is not less than 0.70,

wherein: index of uniform surface-treatment = (time variation of
 5 single-layer absorption capacity of particles having particle diameters of 600 to 300
 μm under a load) \times (time variation of single-layer absorption capacity of particles
 having particle diameters of 300 to 150 μm under a load) \times (variation between
 particles of the single-layer absorption capacity (10 min.) under a load) \times
 (variation between particles of the single-layer absorption capacity (60 min.) under a
 10 load),

where: time variation of single-layer absorption capacity of particles
 having particle diameters of 600 to 300 μm under a load = (single-layer absorption
 capacity (10 min.) of particles having particle diameters of 600 to 300 μm under a
 load) / (single-layer absorption capacity (60 min.) of particles having particle
 15 diameters of 600 to 300 μm under a load); time variation of single-layer absorption
 capacity of particles having particle diameters of 300 to 150 μm under a load =
 (single-layer absorption capacity (10 min.) of particles having particle diameters of
 300 to 150 μm under a load) / (single-layer absorption capacity (60 min.) of particles
 having particle diameters of 300 to 150 μm under a load); variation between
 20 particles of the single-layer absorption capacity (10 min.) under a load =

(single-layer absorption capacity (10 min.) of particles having particle diameters of 300 to 150 μm under a load) / (single-layer absorption capacity (10 min.) of particles having particle diameters of 600 to 300 μm under a load); and variation between particles of the single-layer absorption capacity (60 min.) under a load =
5 (single-layer absorption capacity (60 min.) of particles having particle diameters of 300 to 150 μm under a load) / (single-layer absorption capacity (60 min.) of particles having particle diameters of 600 to 300 μm under a load).

44. A sanitary material, comprising the water-absorbent resin as
10 recited in claim 42.

45. A sanitary material, comprising the water-absorbent resin as
recited in claim 43.